

B Vd

SANTA YNEZ RIVER FLOOD CONTROL PROJECT

SAN MIGUELITO SUBWATERSHED
CALIFORNIA

San Miguelito subwatershed, a tributary to the Santa Ynez River, is located immediately southwest of Lompoc, Santa Barbara County, California. The drainage area is approximately 13 square miles, and consists of steep pasture and brush land, a large industrial mining area, the City of Lompoc, and cultivated land. Flood waters emerging from San Miguelito Canyon had no defined channel and flooded several hundred acres of excellent farm land, used primarily for the production of flower seed, sugar beets and vegetables.

Structural control measures completed in 1952 provide for interception at the mouth of San Miguelito Canyon and conveying the flood waters in a controlled channel to the Santa Ynez River.

Major control measures consist of a 10 acre-foot debris storage basin at the canyon mouth with concrete inlet and outlet structures, two and three-quarter miles of earth channel designed to carry 1,575 c.f.s., and six reinforced concrete road culverts.

The County of Santa Barbara provided all rights-of-way. A local maintenance district is responsible for operation and maintenance of the improvements. The Lompoc Soil Conservation District acts as coordinator for all construction and maintenance activities.

Benefits include approximately twenty-five acres of slough bottom reclaimed with soil from the channel excavation, elimination of state highway flooding, and hundreds of acres of cropland, producing two and three crops per year, are no longer subject to annual inundation from flood waters.



Channel outlet into Santa Ynez River (foreground). Rail log revetment protects outlet.



Completed channel upstream from outlet.

BEFORE



Channel location between outlet and debris basin.

AFTER



Completed channel designed to carry 1,575 c.f.s. with section having bottom stabilized with asphalt treated rock.



Same completed section following high runoff stage.



Ten acre-foot debris basin. Inlet in left center of photograph.



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U.S.A.

BEFORE



Location of debris basin at head of project.

AFTER



Completed debris basin at mouth of Miguelito Canyon.

B7d

SANTA YNEZ FLOOD PREVENTION PROJECT

Purisima-Cebada Subwatersheds

CALIFORNIA

The Cebada and Purisima subwatersheds are tributaries to the Santa Ynez River, and are located about four miles northeast of the City of Lompoc in Santa Barbara County, California. Drainage consists of three canyons which have a common outlet to the river. The drainage area is approximately twenty square miles.

The upper watersheds are characterized by gently to steeply rolling hills, dissected by narrow alluvial valley fills. The lower part consists of a flood plain or delta across which the canyons drained to the river with no well defined channel. The hill lands are primarily brush and grass covered. The valley bottoms are farmed to beans or grain and the delta area is used for irrigated vegetable production. Rainfall varies from twelve to seventeen inches and is frequently of high intensities with resultant high runoff.

The control plan now principally completed consists of establishment of vegetative cover on all steeply sloping lands by reseeding and improved range management, stabilization of alluvial bottoms with terraces, stabilization of gullies with concrete dams, and provision of flood water conveyance across the flood plain in concrete lined channels.

Rights-of-way for construction were negotiated by the Lompoc Soil Conservation District. All were granted at no charge by the land owners. A maintenance district has been organized to provide maintenance for installed improvements.



Completed channel for conveying flood waters from Purisima subwatershed. This channel protects portions of nine farms from flooding.



Completed channel route to Santa Ynez River for conveyance of flood waters from Purisima and Cebada subwatersheds.



Completed channel carrying combined flood flows from Cebada and Purisima subwatersheds.



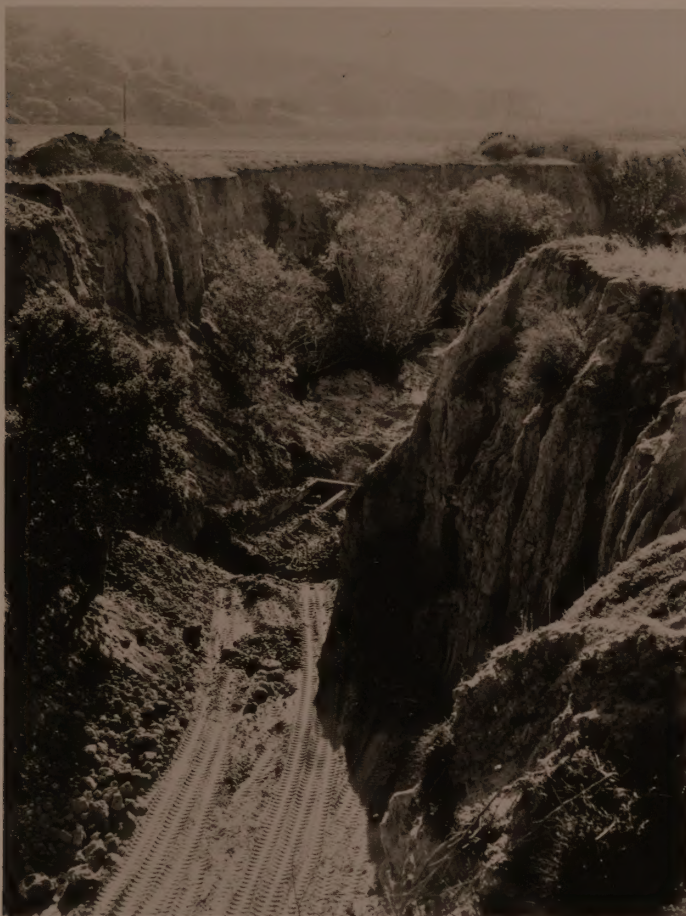
Side weir designed to handle overflow from heavy storms. Adjacent area has protective grass cover.



Location of a section of
Cebada-Purísima re-
stricted channel prior
to construction of new
channel.



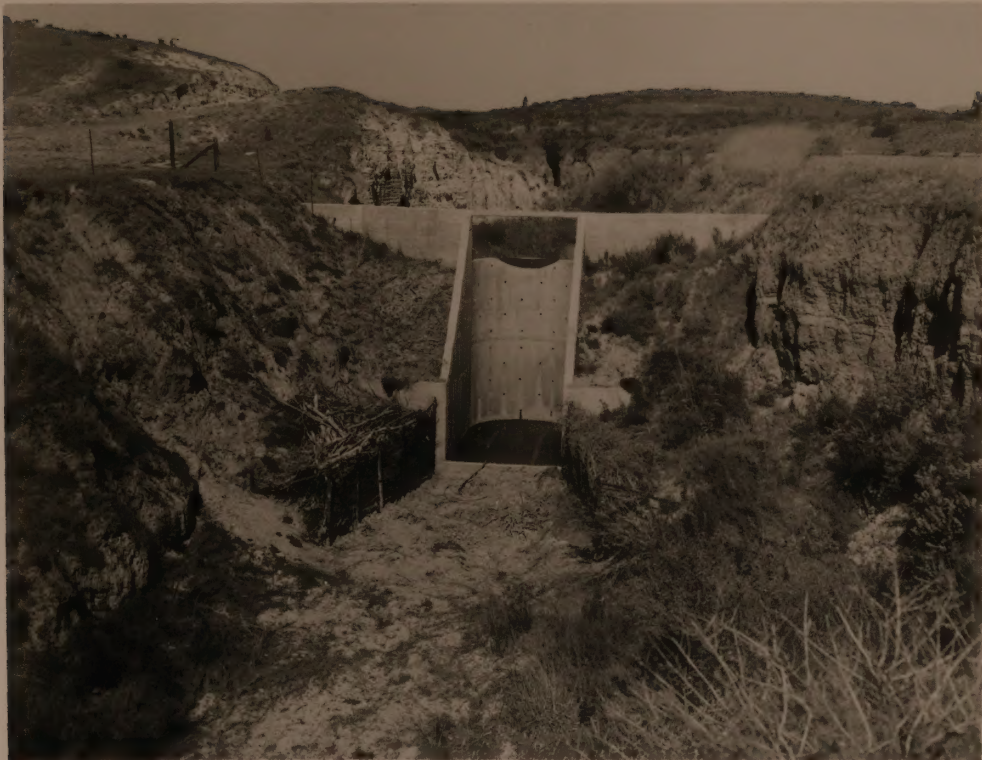
Same location following construction of con-
crete channel.



Site of gully control
dam in Cebada Canyon.



Completed Cebada Canyon gully control dam -
upstream face.



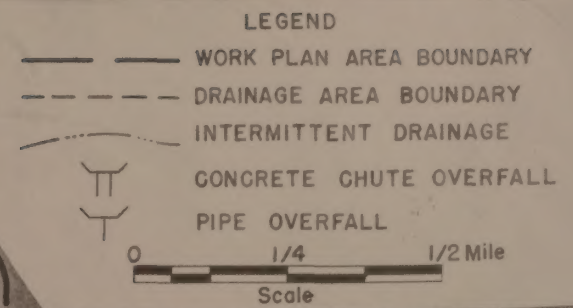
One of a series of gully control dams in Cebada Canyon. Downstream face, with stilling basin and rail-wire downstream revetments.



Model of Purisima-Cebada channel weir structure developed and tested by the University of California to handle short duration heavy flows.

Plate BI-I
SANTA RITA WORK PLAN AREA
SANTA YNEZ FLOOD CONTROL PROJECT
LOMPOC SOIL CONSERVATION DISTRICT
CALIFORNIA
1952

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION DEPARTMENT
ROBERT M. SALTER, CHIEF
PACIFIC REGION J. H. CHRIST, DIRECTOR



LEGEND

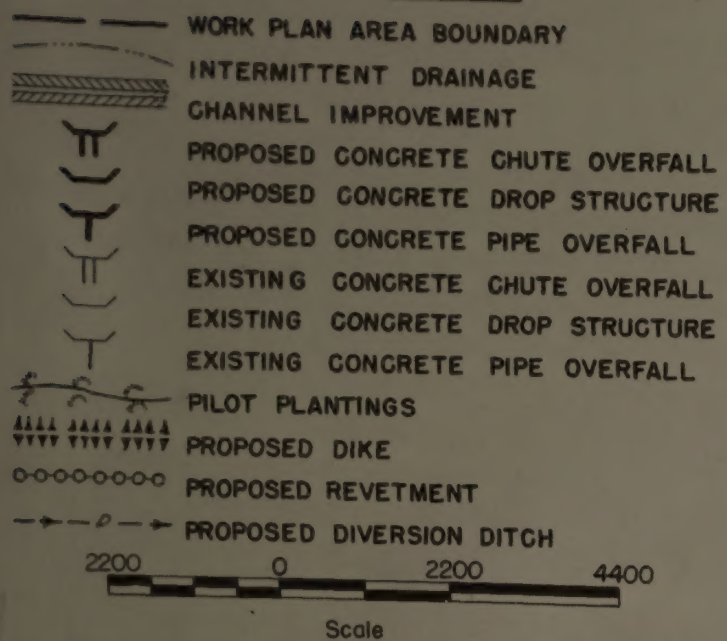


Plate B1a-I
 HOAG AND SANTA RITA WORK PLAN AREA
 SANTA YNEZ FLOOD CONTROL PROJECT
 LOMPOC SOIL CONSERVATION DISTRICT
 CALIFORNIA
 1953
 U.S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION DEPARTMENT
 ROBERT M. SALTER, CHIEF
 PACIFIC REGION J.H. CHRIST, DIRECTOR

TABLE NO. 1
SCHEDULE OF FLOOD CONTROL PROGRAM ESTABLISHMENT AND ESTIMATED COSTS
SANTA YNEZ RIVER WATERSHED

SUB-WATERSHED	TYPE OF WORK	TOTAL COST	SUB-WATERSHED TOTALS	1947	1948	1949	1950	1951	1952	1953	1954	1955
<u>A7a - Purisima</u>												
A7a-12	Range Treatment	380.		380.								
A7a 3,5,9,10,11,13,14,15	Farmland Treatment	1,103.		1,103.								
A7a 2-1, 2-2, 2-3	Channel Cleaning	9,800.			9,800.							
A7a 2-1, 2-2, 2-3	Reinforce Existing Structures	2,990.		2,990.								
A7a 2-1.1, 2-1.2	Construct 2 Gully Structures	2,545.		2,545.								
A7a 2	Diversions and Outlets	3,537.		3,537.								
A7a	Technical Supervision	1,500.		1,500.								
A7a	Contingencies	2,858.		1,388.	1,470.							
A7a	Construction Engineering	1,764.	26,477.	637.	1,127.							
<u>A7b - Cebada</u>												
A7b 13,33	Rangeland Treatment	620.		620.								
A7b 2,7,8,11,15,18,20,22,24,25,27,28,29,31,36	Farmland Treatment	4,855.		4,855.								
A7b 3-1.1, 3-1.2	Dams in Main Channel	68,550.				68,550.						
A7b 6-1.1, A7b 14-1.1	Head Chutes in Main Channel	14,375.			5,350.	9,025.						
A7b 3-1	Temporary P & W Checks	3,000.				3,000.						
A7b 3-1	Vegetative Plantings	1,400.				1,400.						
A7b 14-1	Reinforce Existing Structures	390.		390.								
A7b-3, 6, 14	Diversions and Outlets	4,409.			4,409.							
A7b	Technical Supervision	1,100.		700.	400.							
A7b	Contingencies	14,129.		59.	1,773.	12,297.						
A7b	Construction Engineering	10,081.	122,909.	45.	615.	9,421.						
<u>A7c East Cebada</u>												
A7c 4,5,7,8,12,13	Farmland Treatment	1,471.		1,471.								
A7c 6	Diversions and Outlets	645.		645.								
A7c 1-2	Vegetative Plantings	900.		900.								
A7c	Technical Supervision	400.		400.								
A7c 1-1.1, 1-3.1, 1-5.5	Channel Excav. & Revetment	2,033.				2,033.						
A7c 1-3, 1-4, 1-5	Channel Cleaning & Bank Planting	1,000.				1,000.						
A7c 1-2.1, 2.2, 2.3	R. C. Pipe Diversion	18,892.				18,892.						
A7c1-3.2, 3.3, 3.4	R. C. Inlet and Channel	55,095.				55,095.						
A7c1-4.1, 4.2	R. C. Inlet and Channel	17,285.				17,285.						
A7c1-5.1, 5.2, 5.3, 5.4	R. C. Channel and Outlet	95,047.				95,047.						
A7c	Contingencies	28,653.		250.		28,403.						
A7c	Construction Engineering	21,890.	243,311.	115.		21,775.						

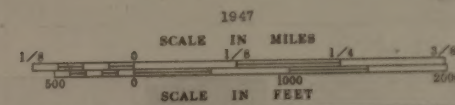
TABLE NO. 1 (continued)
SCHEDULE OF FLOOD CONTROL PROGRAM ESTABLISHMENT AND ESTIMATED COSTS
SANTA YNEZ RIVER WATERSHED

SUB-WATERSHED	TYPE OF WORK	TOTAL COST	SUB-WATERSHED TOTALS	1947	1948	1949	1950	1951	1952	1953	1954	1955
<u>A3a - San Miguelito</u>												
A3a 1-1	Excavated Channel	74,358.						74,358.				
A3a 1-1.1, 1.2, 1.3, 1.4, 1.5, 1.6	R. C. Box Culverts	99,297.						99,297.				
A3a 1-2	Debris Basin	8,136.						8,136.				
A3a 1-2.1, 2.2	Inlet and Outlet Structures	16,950.						16,950.				
A3a 1-3	Enlarge Channel	555.						555.				
A3a	Contingencies	29,894.						29,894.				
A3a	Construction Engineering	22,919.						22,919.				
			252,109.									
<u>A3b - San Pasqual & Rodeo *</u>												
	Channel Improvement	141,800.							141,800.			
	Contingencies	21,200.							21,200.			
			163,000.									
<u>B1a - Santa Rita *</u>												
	Channel Stabilization	341,475.								200,000.	141,475.	
	Rangeland Treatment	4,710.							2,350.	2,360.		
	Farmland Treatment	15,500.							5,500.	5,000.	5,000.	
	Contingencies	54,250.							1,175.	31,105.	21,970.	
			415,935.									
<u>B1b - Santa Rosa *</u>												
	Channel Stabilization	521,360.									221,360.	300,000.
	Rangeland Treatment	4,308.								2,200.	2,108.	
	Farmland Treatment	12,450.								4,450.	4,000.	4,000.
	Contingencies	80,700.								1,000.	34,100.	45,600.
			618,818.									
<u>B1c - Palos Blancos *</u>												
	Farmland Treatment	3,565.									1,565.	2,000.
	Rangeland Treatment	340.									340.	
			3,905.									
<u>Total Work by Fiscal Years</u>												
Technical Service and Supervision		\$ 1,846,464.		\$ 24,530.	\$ 24,944.	\$ 103,693.	\$ 239,530.	\$ 252,109.	\$ 172,025.	\$ 246,115.	\$ 431,918.	\$ 351,600.
Work Plan Preparation		278,562.		5,273.	3,741.	15,554.	35,929.	37,816.	25,804.	35,917.	64,788.	52,740.
Overhead		38,867.		10,652.	10,465.	7,250.	6,500.	2,000.	2,000.	--	--	--
Total Flood Control Operations		326,558.		5,045.	4,350.	19,045.	42,294.	43,789.	29,974.	42,455.	74,506.	65,100.
Total Authorized Funds		\$ 2,490,451.		\$ 45,500.	\$ 43,500.	\$ 145,542.	\$ 324,253.	\$ 335,714.	\$ 229,803.	\$ 325,487.	\$ 571,212.	\$ 469,440.
Total Authorized Funds Remaining End of 1947		188,000.										
Deficiency of Authorization		131,668.										
		\$ 2,302,451.										

* Reconnaissance Estimate

Total 2,501,288

PLATE 1a
 Field #1 East Cebada Work Plan Area "A7C1."
 Santa Ynez River Flood Control Project
 Lompoc Soil Conservation District
 United States Department of Agriculture
 Soil Conservation Service
 California

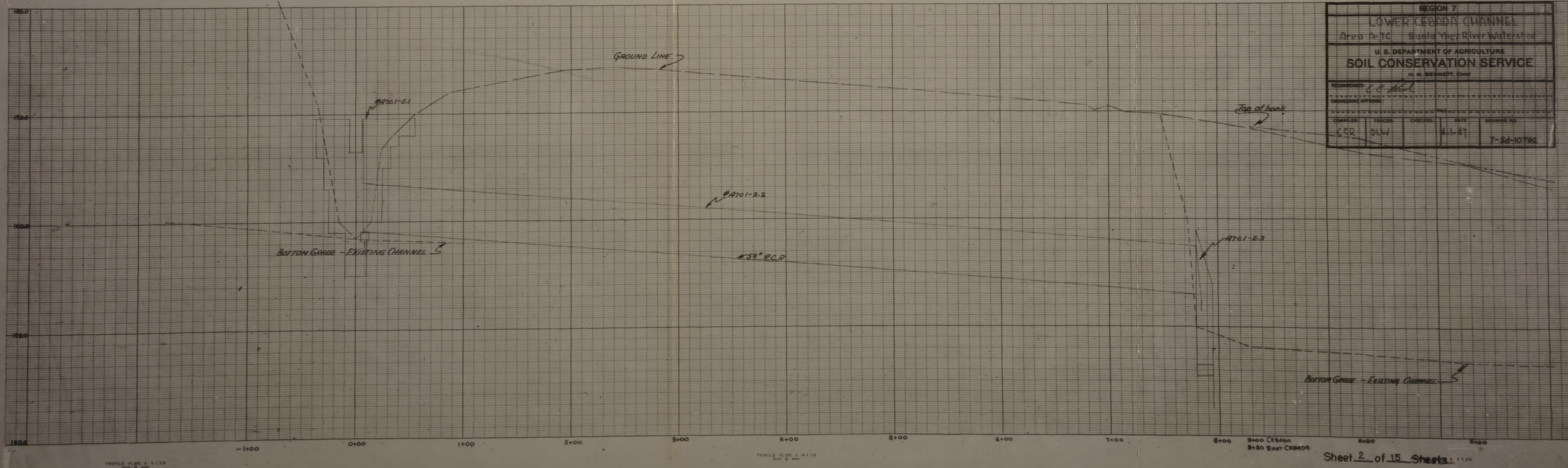


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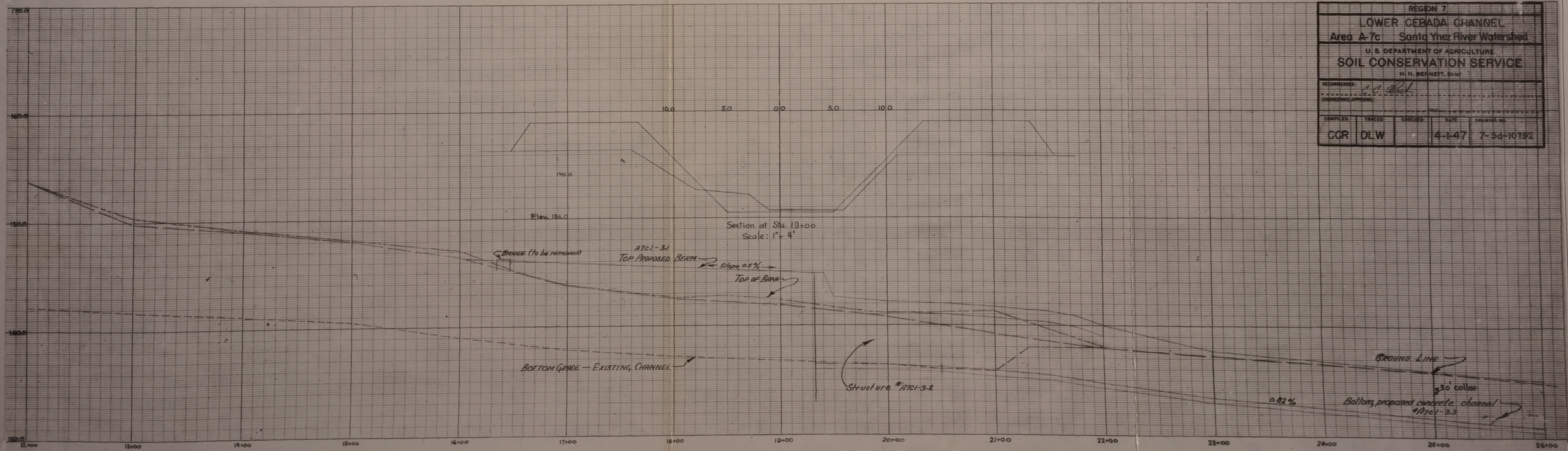
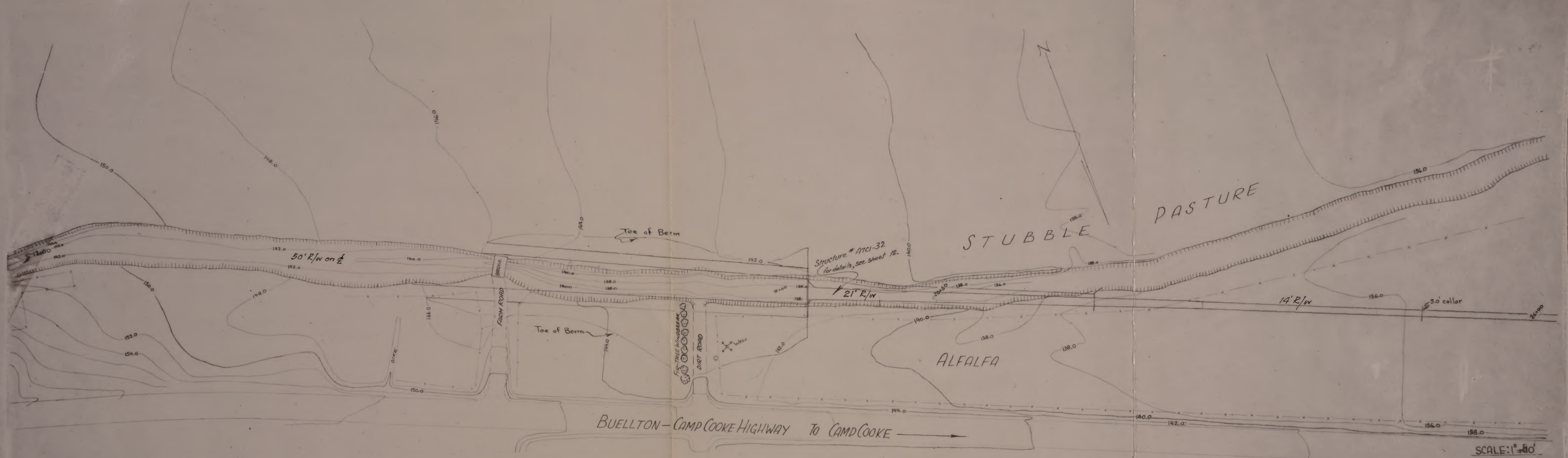
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- Dam (Reinforced Concrete)
- - - Ditch (unlined)
- ==== Ditch (concrete lined)
- ==== Ditch Junction
- Pipeline
- TT Outlet Baffle (concrete)
- Revetment
- Inlet Transition and Wasteway
- Box Culvert
- Channel Reach Designation
- Structure Designation



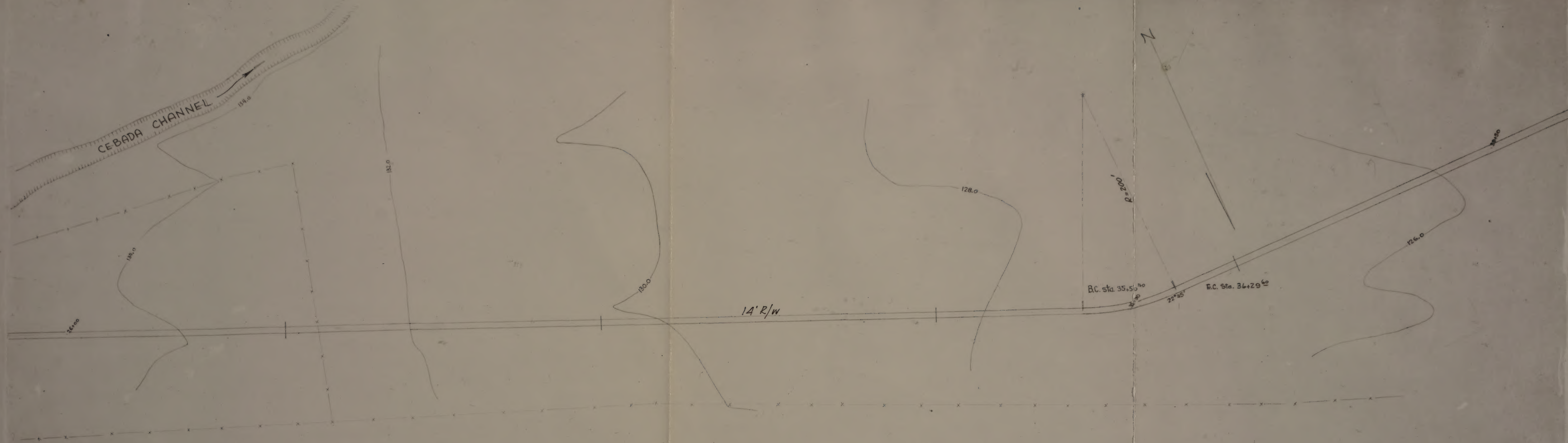
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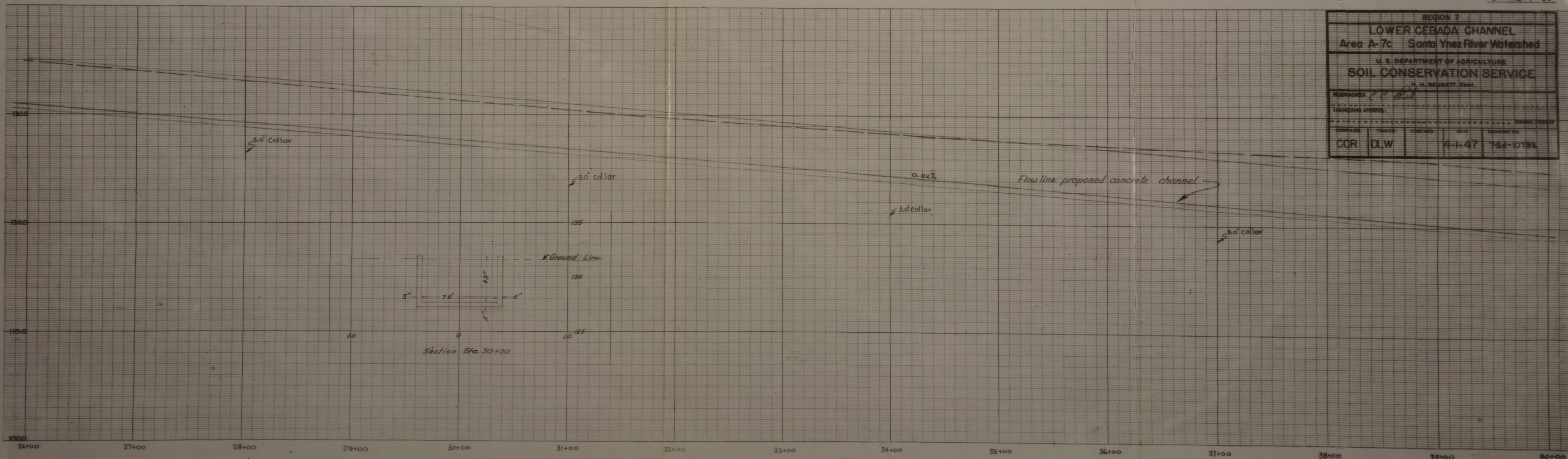
REGION 7				
LOWER CEBADA CHANNEL				
Area A-7C Santa Ynez River Watershed				
U. S. DEPARTMENT OF AGRICULTURE				
SOIL CONSERVATION SERVICE				
H. H. BENNETT, CHIEF				
RECOMMENDED: <i>E. C. Hill</i>				
DRAWING APPROVED:				
COMPILED:	TRACED:	CHECKED:	DATE:	DRAWING NO.:
CSR	DLW		6-1-47	7-54-10782



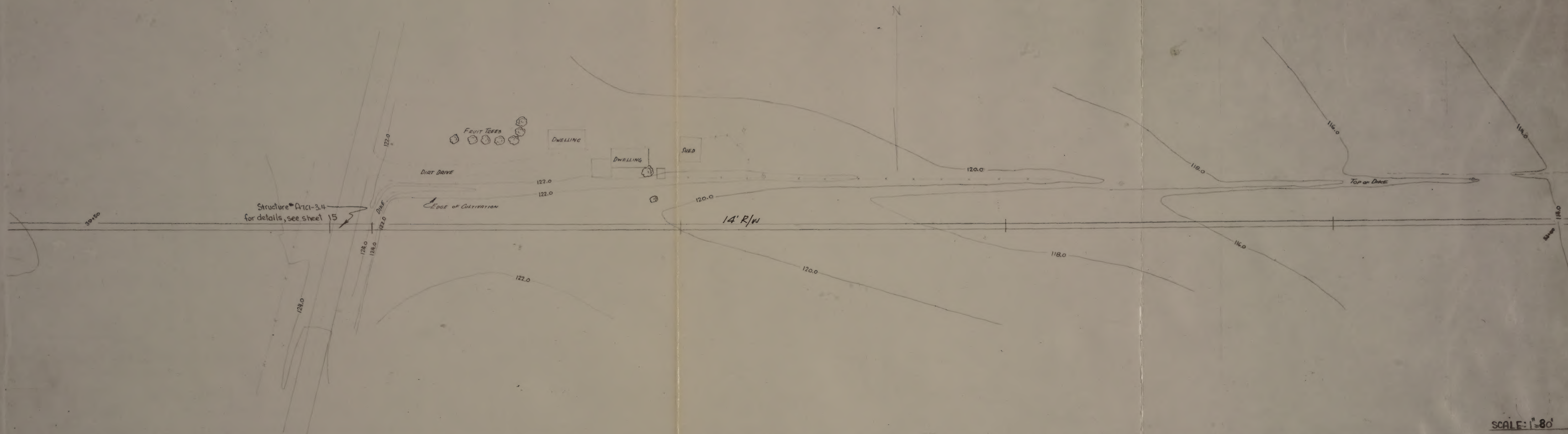
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LOWER GUBADA CHANNEL				
Area A-7c Santa Ynez River Watershed				
U. S. DEPARTMENT OF AGRICULTURE				
SOIL CONSERVATION SERVICE				
H. H. BENNETT, Chief				
RECOMMENDED: <i>[Signature]</i>				
DRAWING APPROVAL:				
COMPILED	TRACED	CHECKED	DATE	DRAWN BY
CGR	DLW		4-1-47	7-30-10782



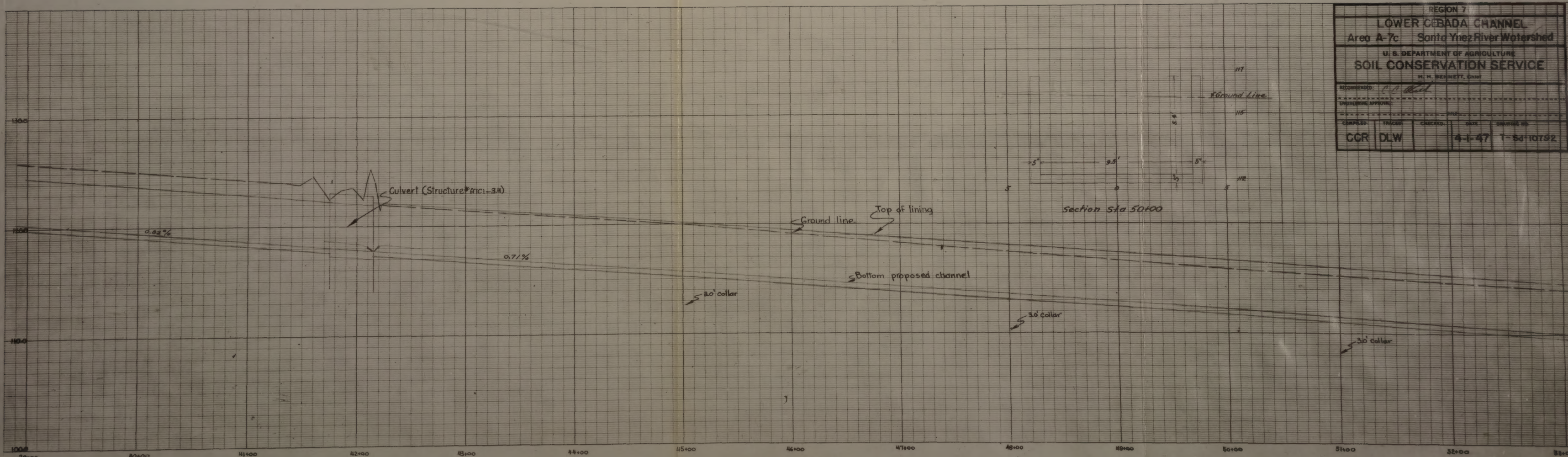
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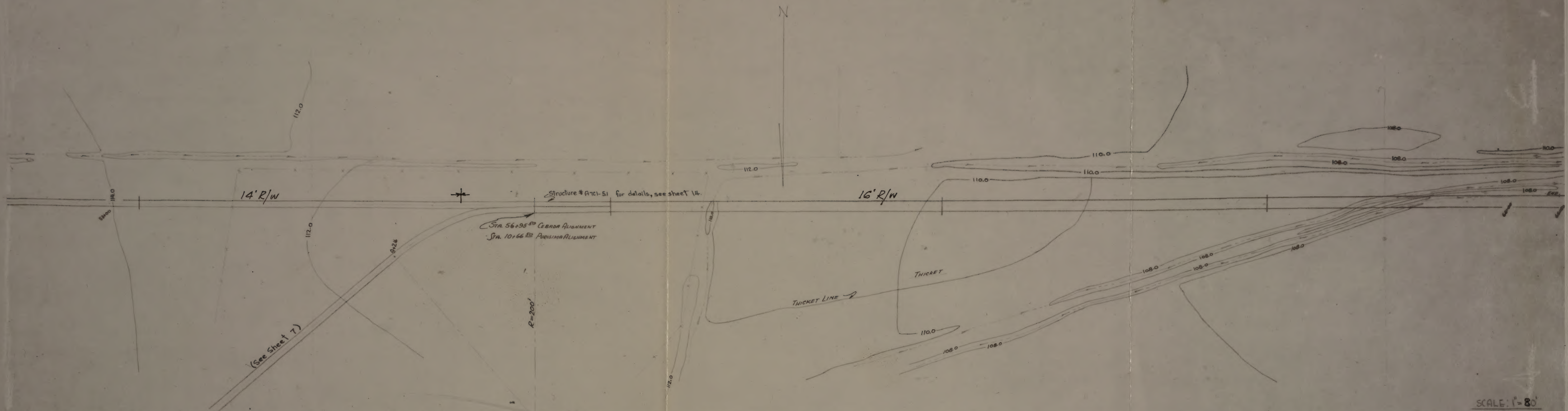
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LOWER CEBADA CHANNEL				
Area A-7c Santa Ynez River Watershed				
U. S. DEPARTMENT OF AGRICULTURE				
SOIL CONSERVATION SERVICE				
H. H. BENNETT, CHIEF				
RECOMMENDED <i>P. P. Bennett</i>				
ENGINEERING APPROVAL:				
COMPILED	TRACED	CHECKED	DATE	DRAWING NO.
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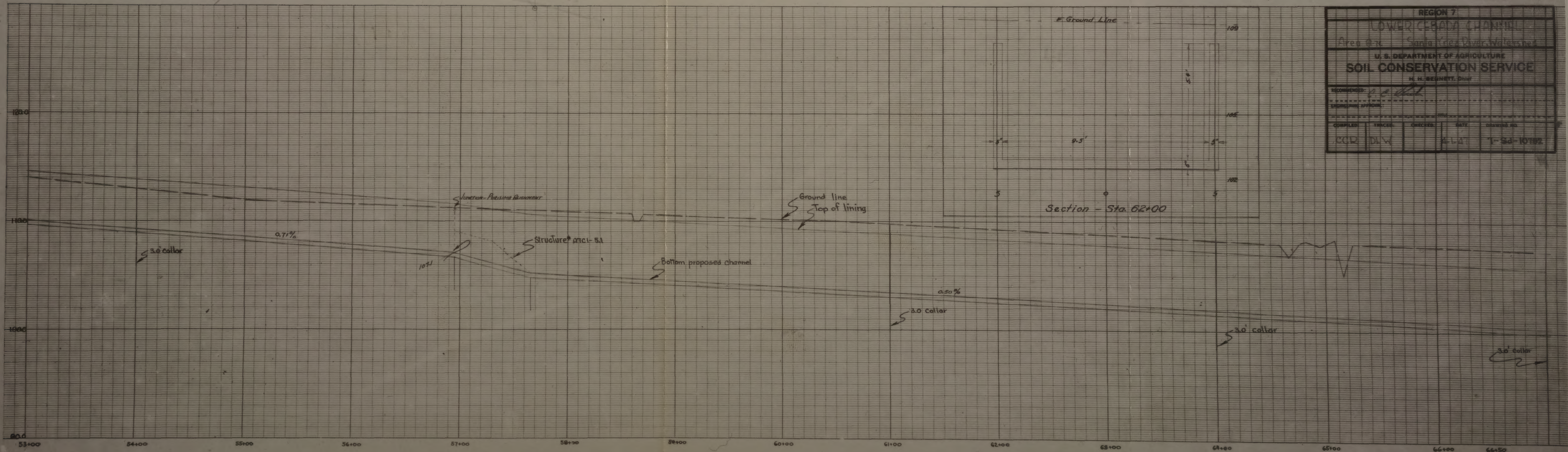
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REGION 7					
LOWER CEBADA CHANNEL					
Area A-7c Santa Ynez River Watershed					
U.S. DEPARTMENT OF AGRICULTURE					
SOIL CONSERVATION SERVICE					
R. H. BENNETT, CHIEF					
RECOMMENDED: C. P. BENT					
ENGINEERING APPROVAL:					
COMPILED:	TRACED:	CHECKED:	DATE:	DRAWING NO.	
CGR	DLW		4-1-47	1-54-10792	



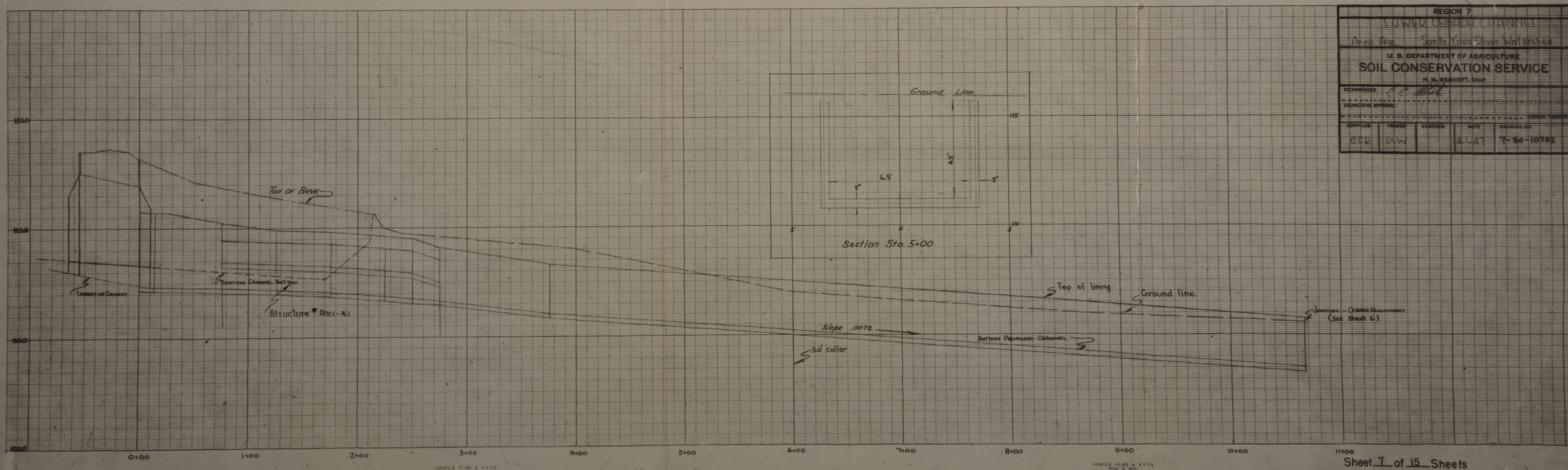
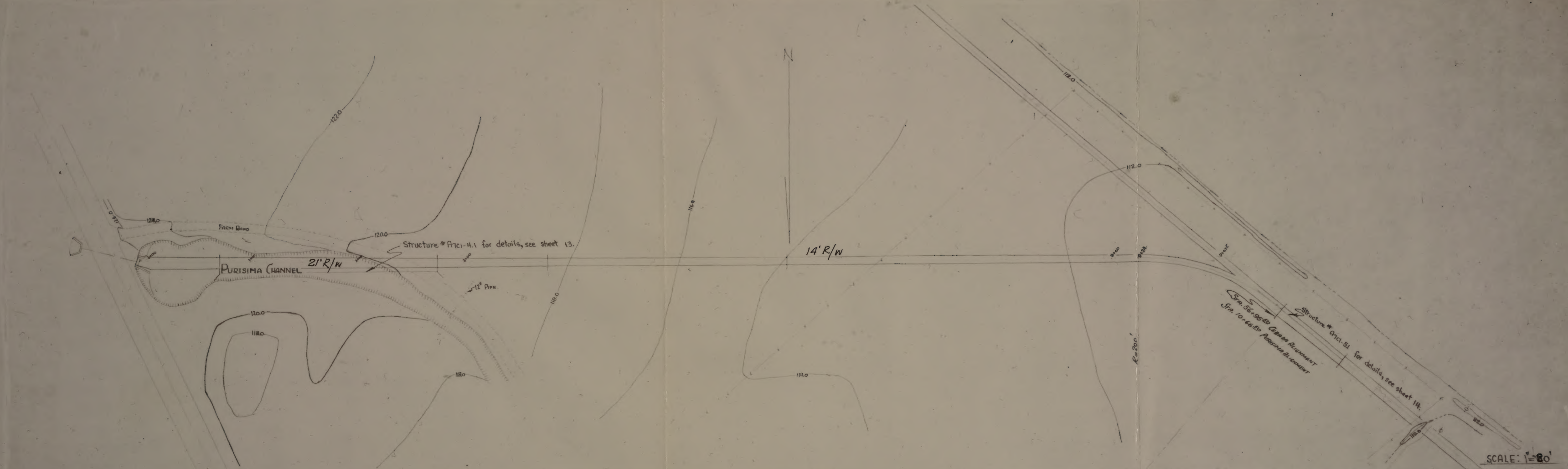
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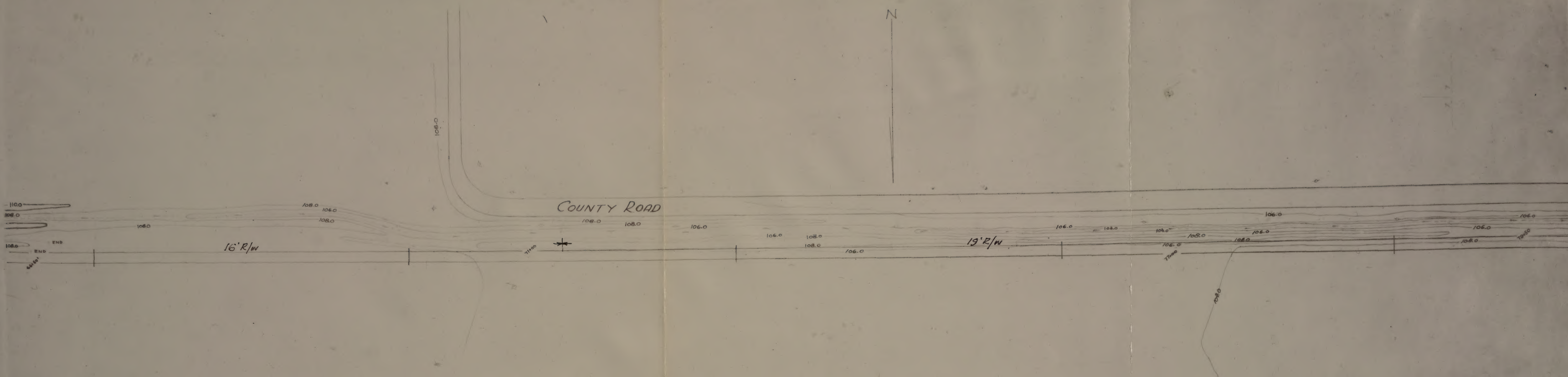
REGION 7				
LOWER CEBADA CHANNEL				
Area #16 Santa Ynez River Watershed				
U. S. DEPARTMENT OF AGRICULTURE				
SOIL CONSERVATION SERVICE				
H. H. BENNETT, District Engineer				
RECOMMENDED: <i>[Signature]</i>				
DRAWING APPROVAL:				
COMPILED:	TRACED:	CHECKED:	DATE:	DRAWING NO.
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PROFILE PLATE A 4 X 20
Scale 2"=100'

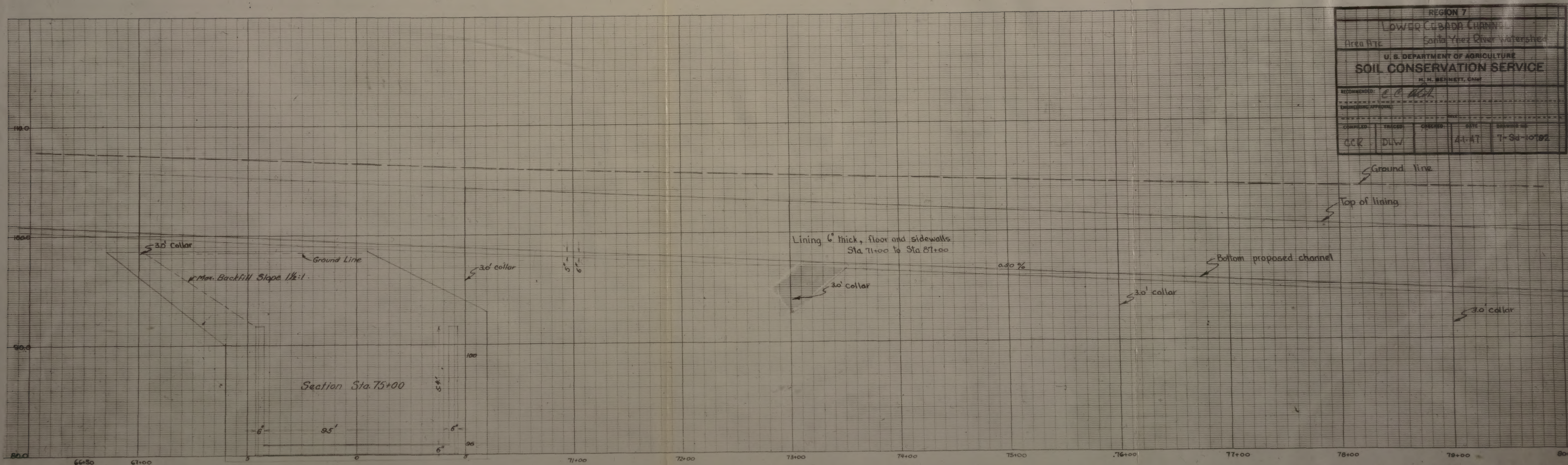
PROFILE PLATE A 4 X 20
Scale 2"=100'



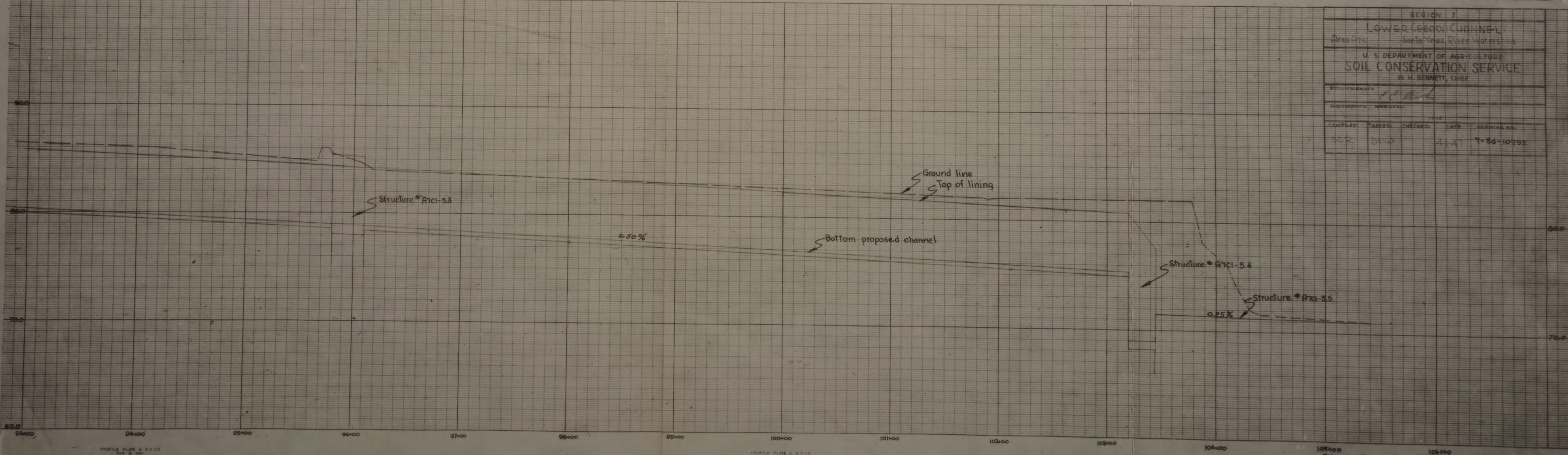
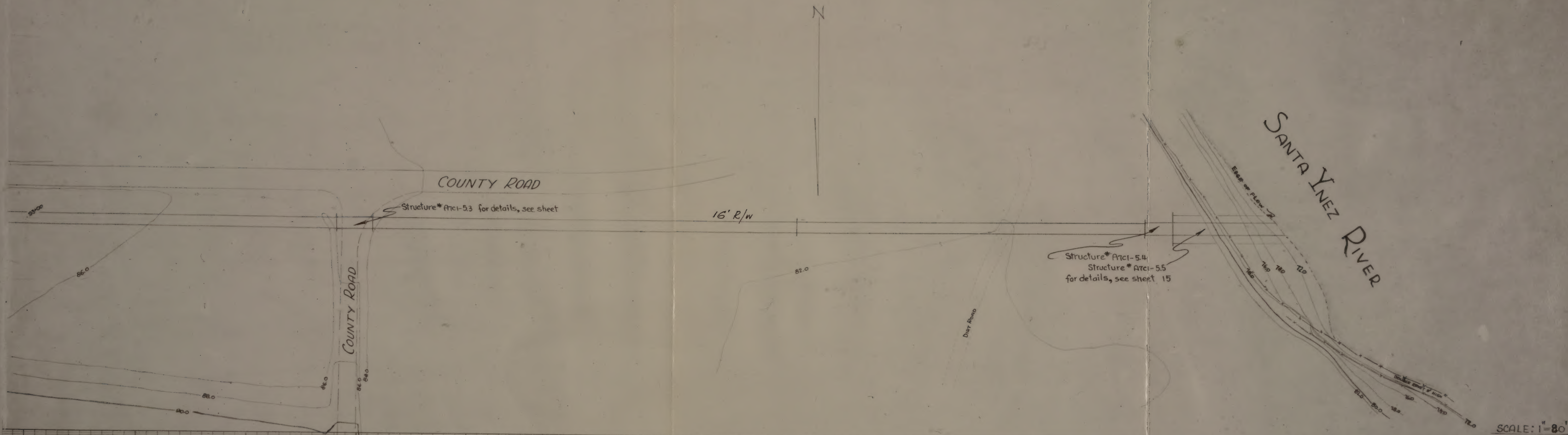
REGION 7				
LOWER COLUMBIA CHANNEL				
Area A - Santa Ynez River Watershed				
U. S. DEPARTMENT OF AGRICULTURE				
SOIL CONSERVATION SERVICE				
H. H. BENNETT, Chief				
DESIGNED	BY	CHECKED	DATE	APPROVED
CCR	DW		4-1-47	
DRAWING NO. 7-53-10792				



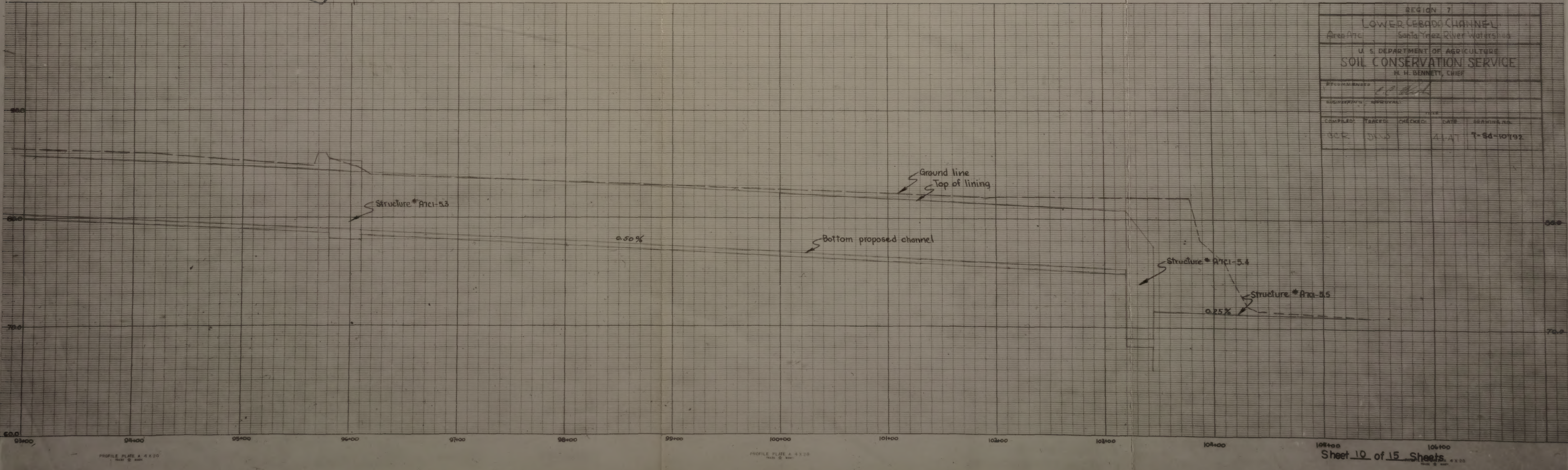
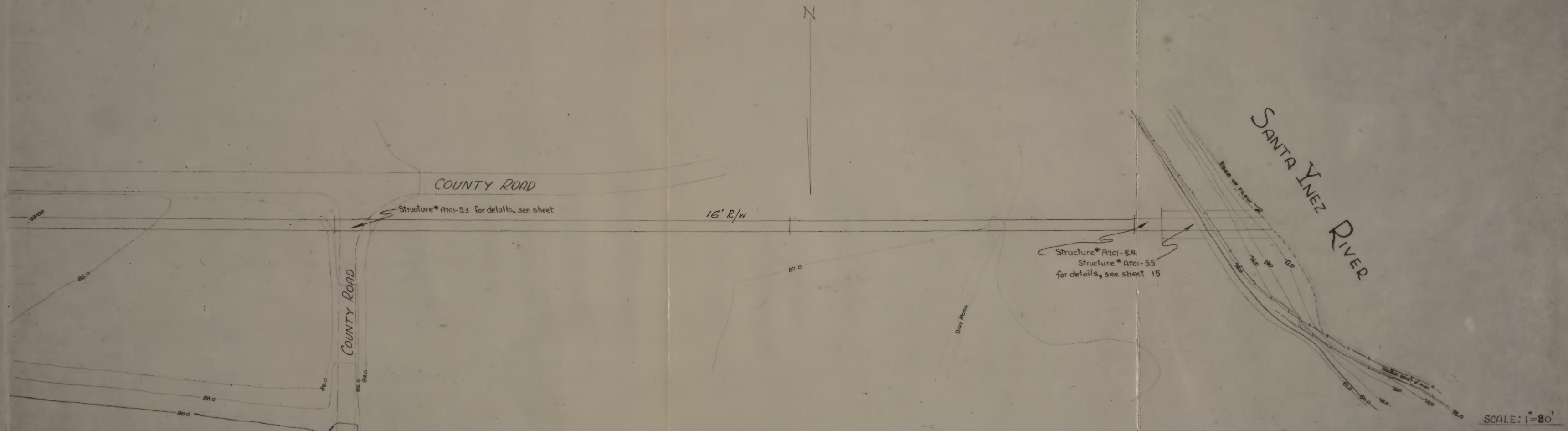
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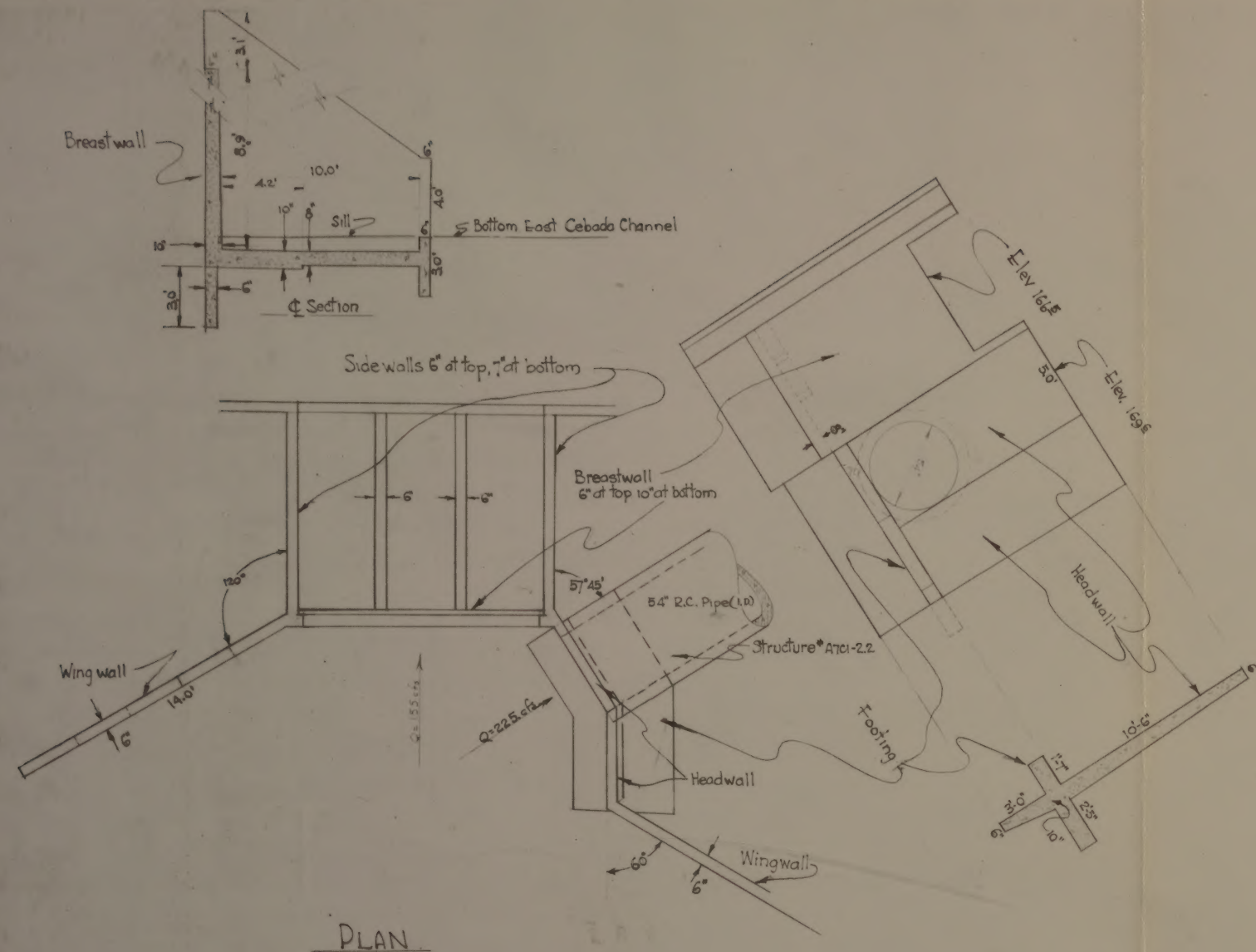


REGION 7				
LOWER CEBADA CHANNEL				
Area 47C Santa Ynez River Watershed				
U. S. DEPARTMENT OF AGRICULTURE				
SOIL CONSERVATION SERVICE				
H. H. BENNETT, CHIEF				
RECOMMENDED: C. A. HICK				
DRAWING OFFICE:				
COMPILED	TRACED	CHECKED	DATE	DRAWN BY
CCR	DLW		4-1-47	7-30-10-192

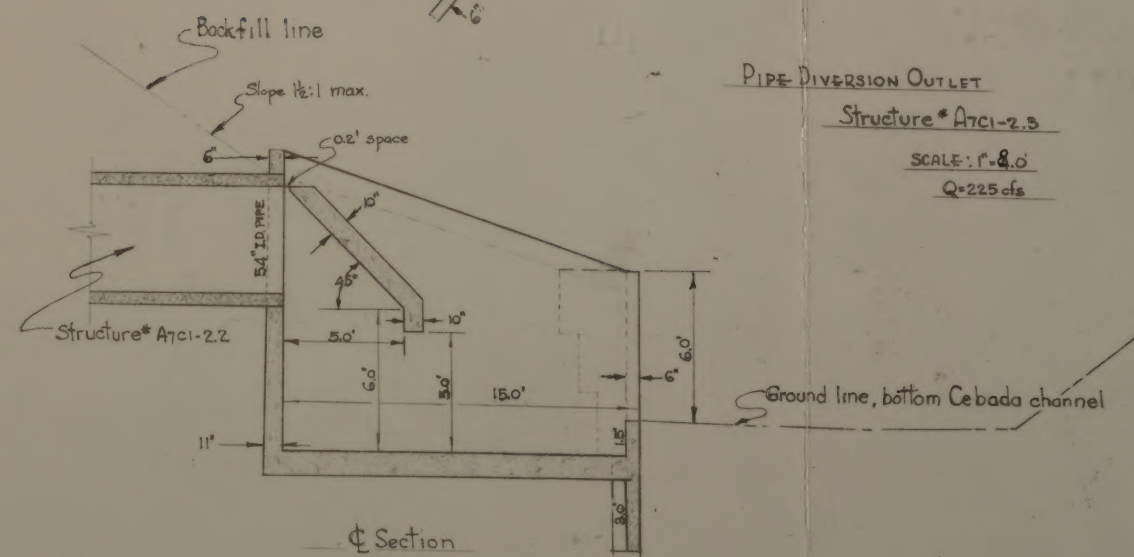
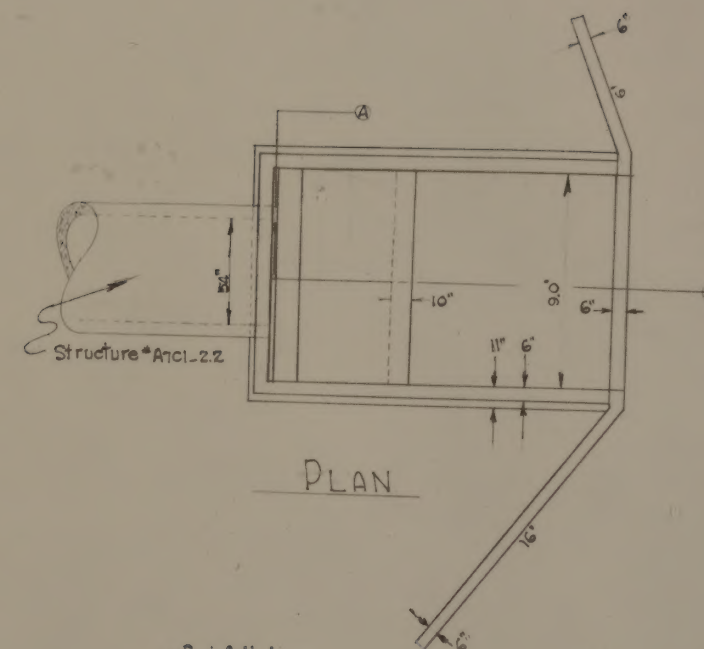
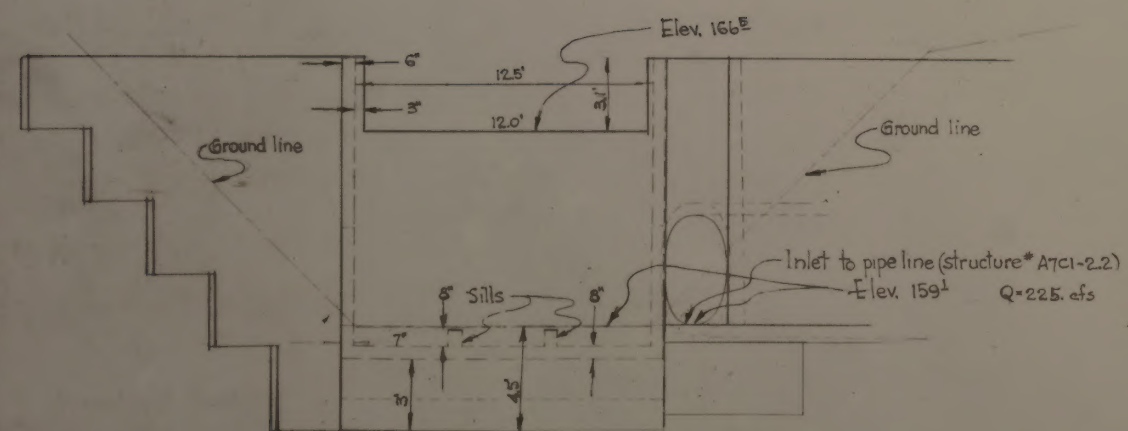


REGION 7				
LOWER CEBADA CHANNEL				
Santa Ynez River Watershed				
U. S. DEPARTMENT OF AGRICULTURE				
SOIL CONSERVATION SERVICE				
M. H. BENNETT, CHIEF				
RECOMMENDED	DATE			
APPROVED	DATE			
COMPILED	TRACED	CHECKED	DATE	REVISION NO.
DCR	DLW	ALAT	7-24-10792	



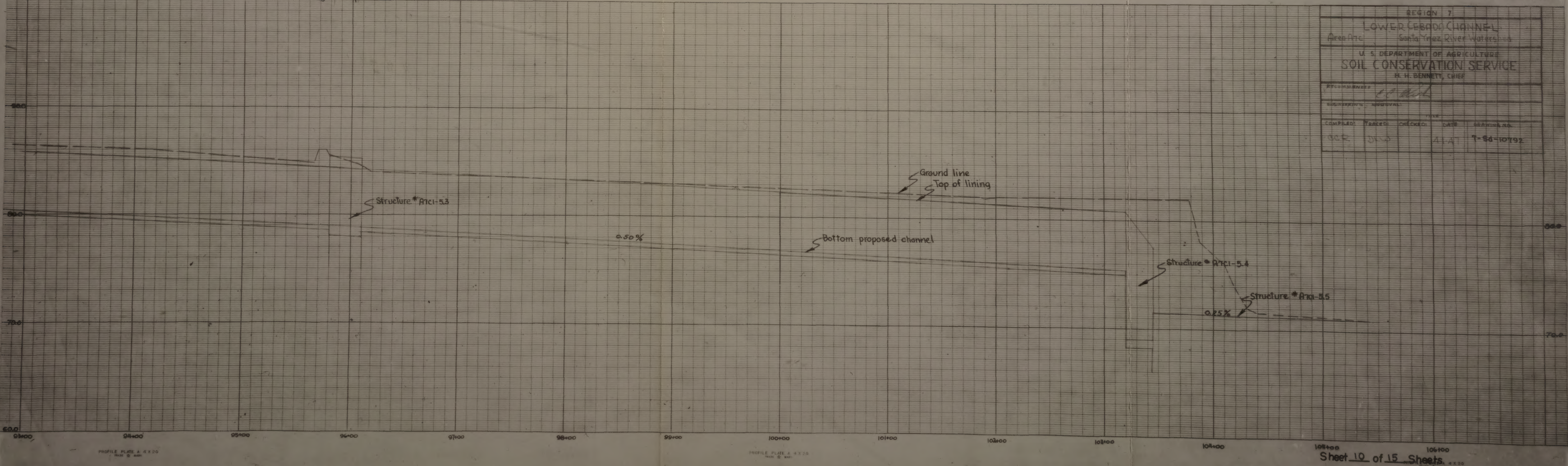
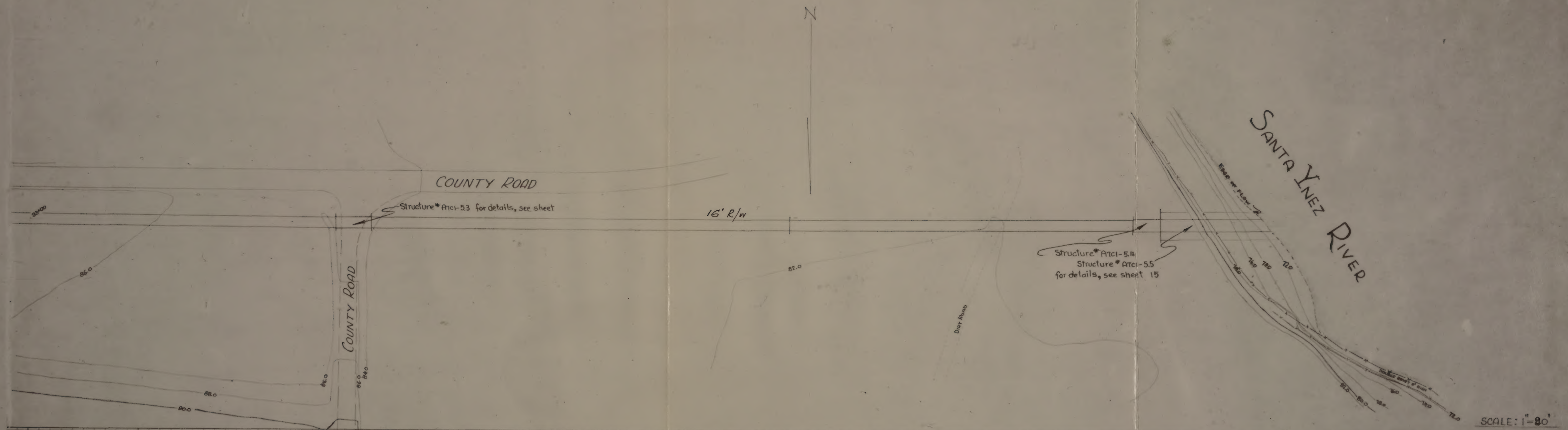


PIPE DIVERSION INLET
Structure # A7c1-21
SCALE: 1"=4.0'

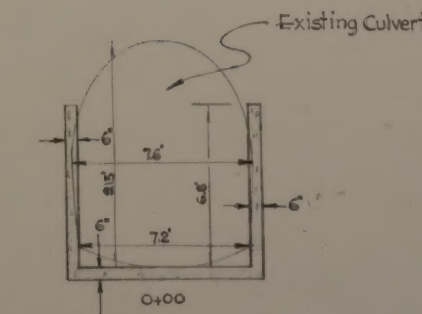
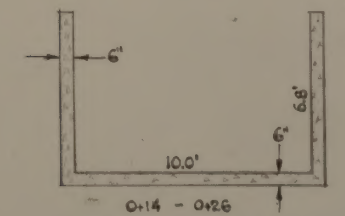
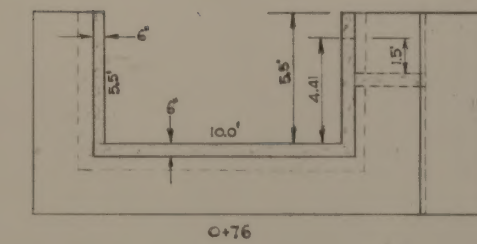
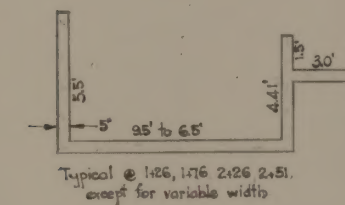
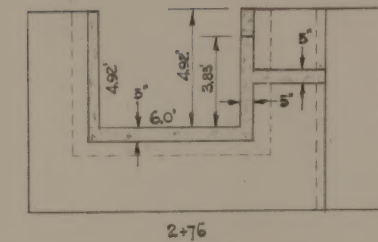
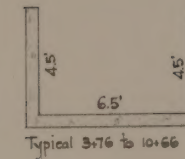
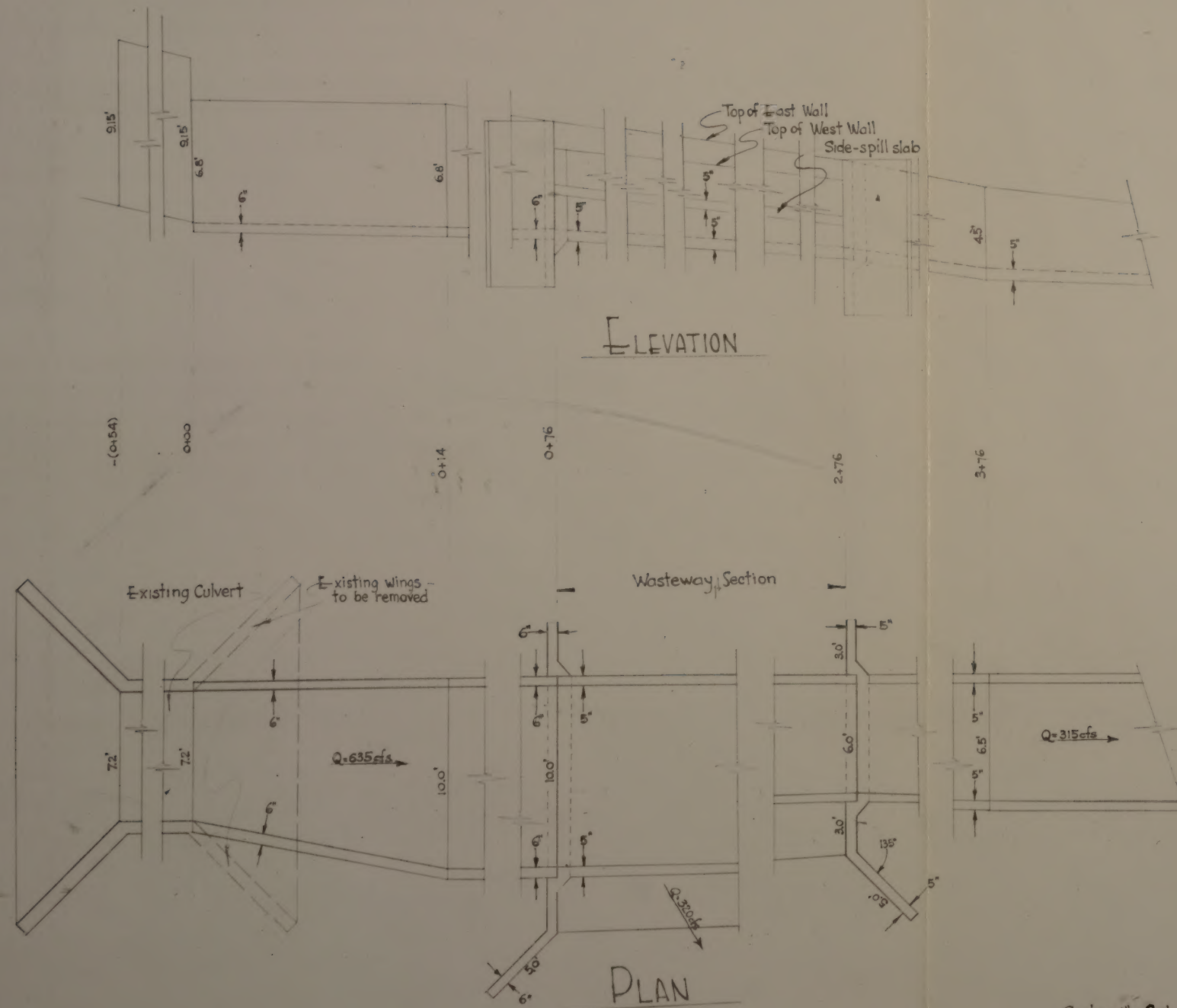


PIPE DIVERSION OUTLET
Structure # A7c1-2.2
SCALE: 1"=8.0'
Q=225 cfs

REGION 7				
STRUCTURAL DETAILS				
East Cebada Diversion				A7c1-2
U. S. DEPARTMENT OF AGRICULTURE				
SOIL CONSERVATION SERVICE				
H. H. BENNETT, Chief				
RECOMMENDED <i>C. C. Smith</i>				
ENGINEERING APPROVAL:				
COMPILED	TRACED	CHECKED	DATE	DRAWING NO.
CCR	DLW		4-1-47	7-5d-10792

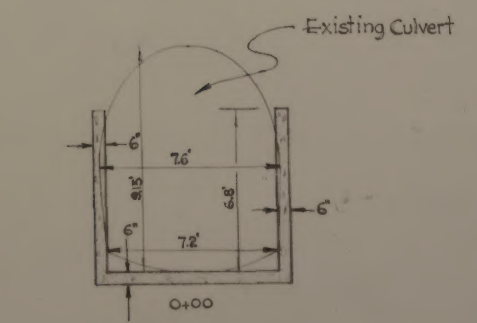
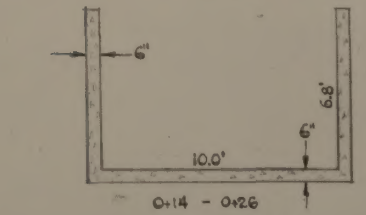
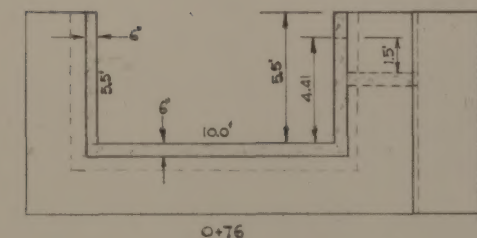
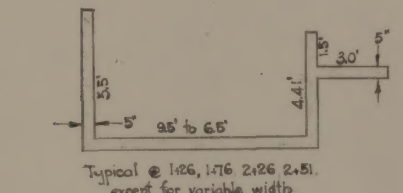
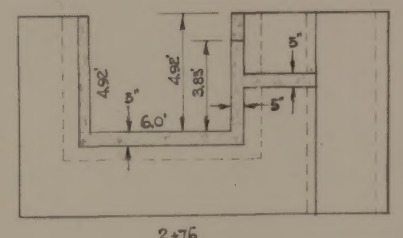
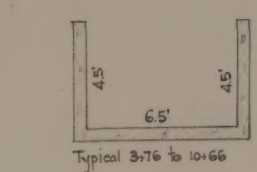
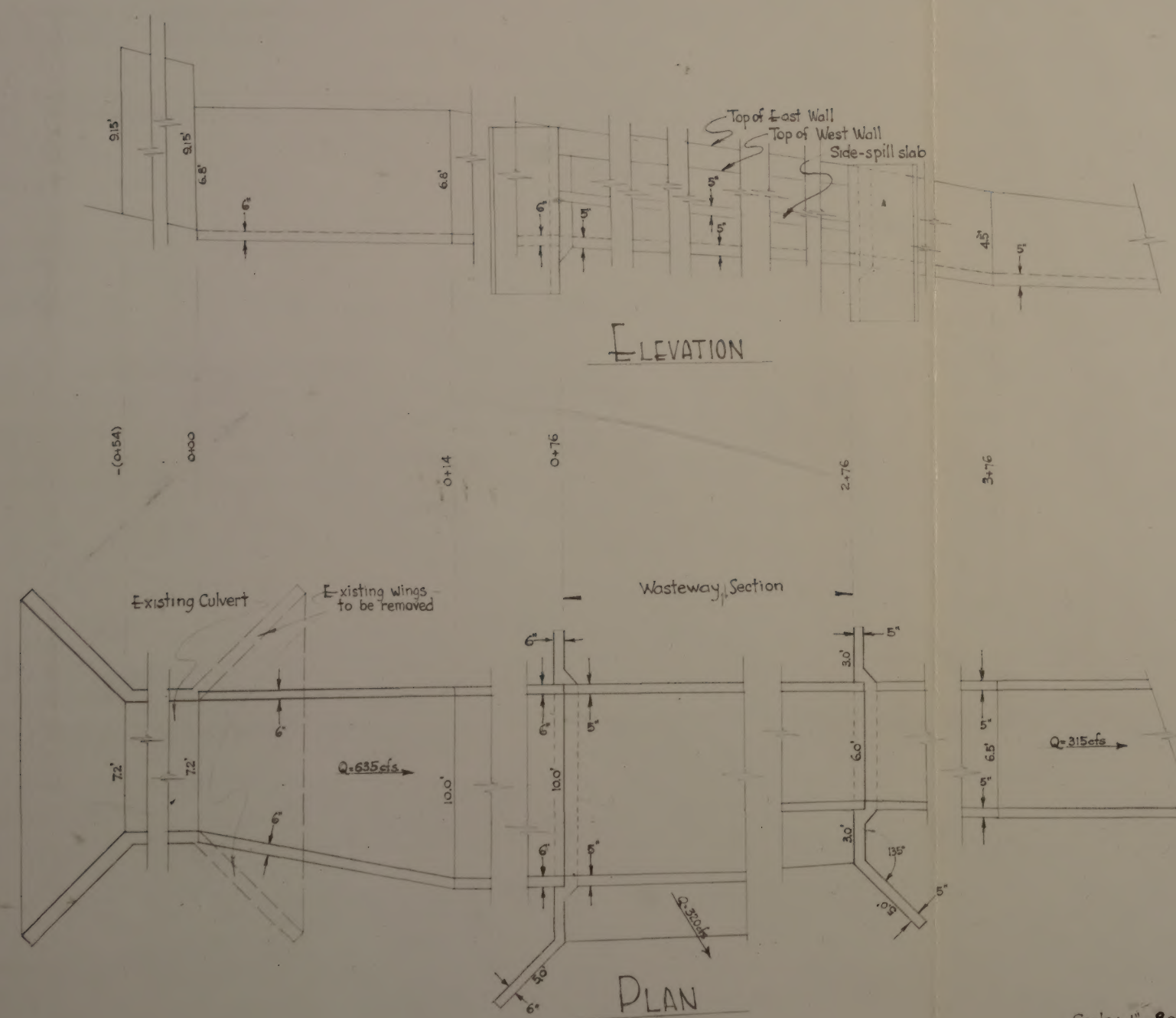


REGION 7					
LOWER CEBADA CHANNEL					
Area Atci Santa Ynez River Watershed					
U. S. DEPARTMENT OF AGRICULTURE					
SOIL CONSERVATION SERVICE					
H. H. BENNETT, CHIEF					
RECOMMENDED					
SUPERVISOR'S APPROVAL					
COMPILED	TRACED	CHECKED	DATE	SHEET NO.	
OCR	OCR	ALAT	7-8-10792		



STATION	F/L Elev.	Width	E. WALL HEIGHT	W. WALL HEIGHT	SLOPE
-(0+54)	115.85	7.2	9.15	9.15	.020
0+00	114.77	7.2	9.15/6.8	9.15/6.8	.010
0+14	114.63	10.0	6.8	6.8	.000
0+26	114.63	10.0	6.8	6.8	.0011
0+76	114.57	10.0	5.5	5.5/4.41	.0038
1+26	114.38	9.0	5.5	4.41	.0053
1+76	114.11	8.0	5.5	4.41	.0076
2+26	113.73	7.0	5.5	4.41	.0101
2+51	113.48	6.5	5.5	4.41	.0102
2+76	113.23	6.0	4.92	3.83/4.92	.0116
3+76	112.07	6.5	4.5	4.5	.0072
10+66	107.1	6.5	4.5	4.5	

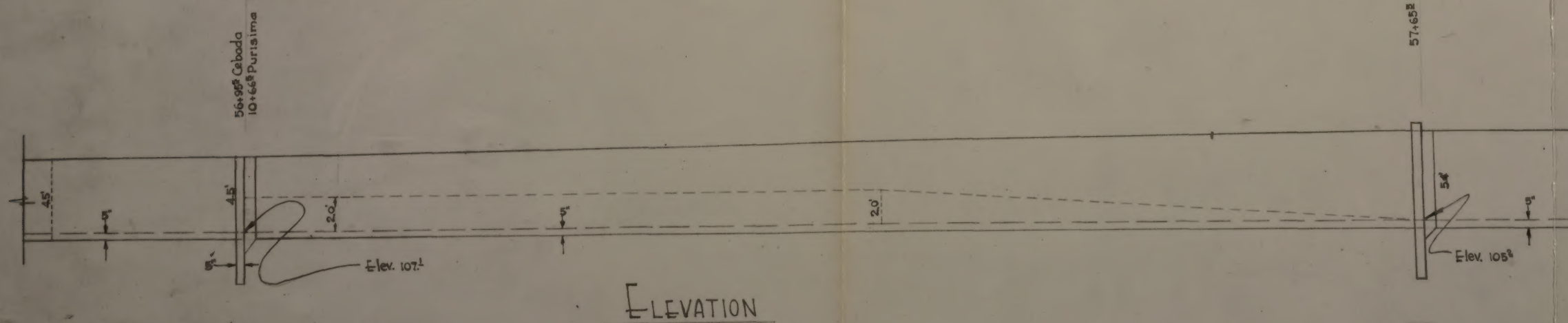
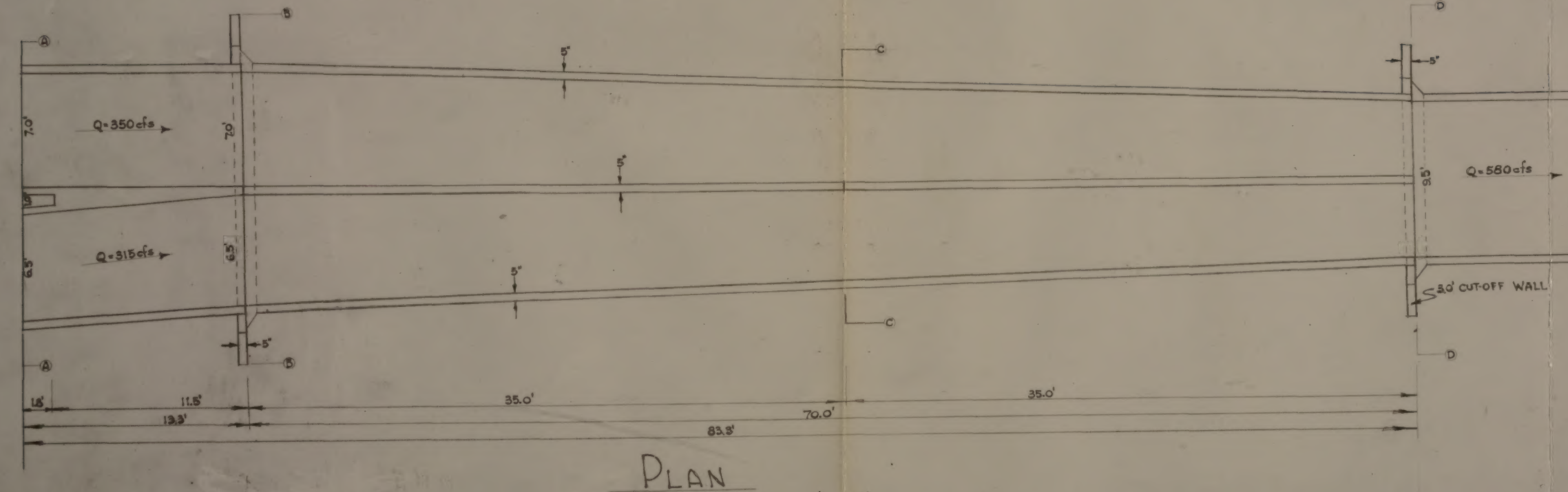
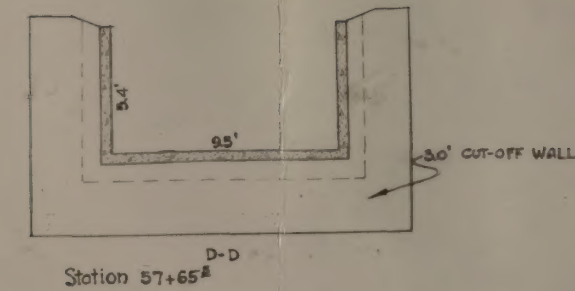
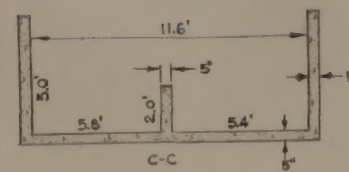
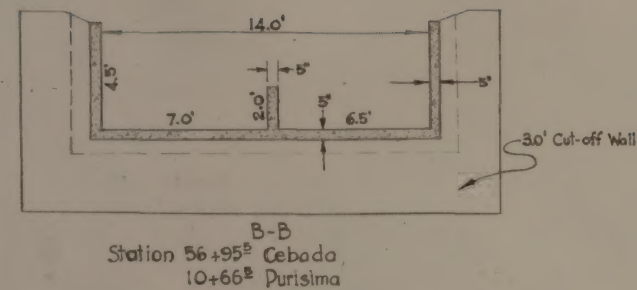
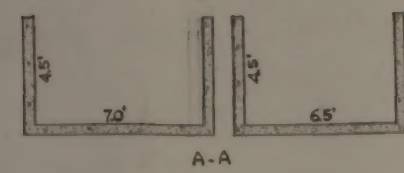
REGION 7				
WASTEWAY DETAILS				
Purissima Channel		Structure #A-1-41		
U. S. DEPARTMENT OF AGRICULTURE				
SOIL CONSERVATION SERVICE				
H. M. BENNETT, Chief				
RECOMMENDED <i>C.C. 121</i>				
ENGINEERING APPROVAL				
COMPILED	TRACED	CHECKED	DATE	DRAWING NO.
CCR	DLW		4-1-47	7-5d-10792



STATION	F/L Elev.	Width	E. WALL HEIGHT	W. WALL HEIGHT	SLOPE
-0+54	115.85	7.2	9.15	9.15	.020
0+00	114.77	7.2	9.15/6.8	9.15/6.8	.010
0+14	114.63	10.0	6.8	6.8	.000
0+26	114.63	10.0	6.8	6.8	.000
0+76	114.87	10.0	5.5	5.5/4.41	.0011
1+26	114.38	9.0	5.5	4.41	.0053
1+76	114.11	8.0	5.5	4.41	.0053
2+26	113.73	7.0	5.9	4.41	.0076
2+51	113.48	6.5	5.5	4.41	.0101
2+76	113.23	6.0	4.92	3.83/4.92	.0102
3+76	112.07	6.5	4.5	4.5	.0116
10+66	107.1	6.5	4.5	4.5	.0072

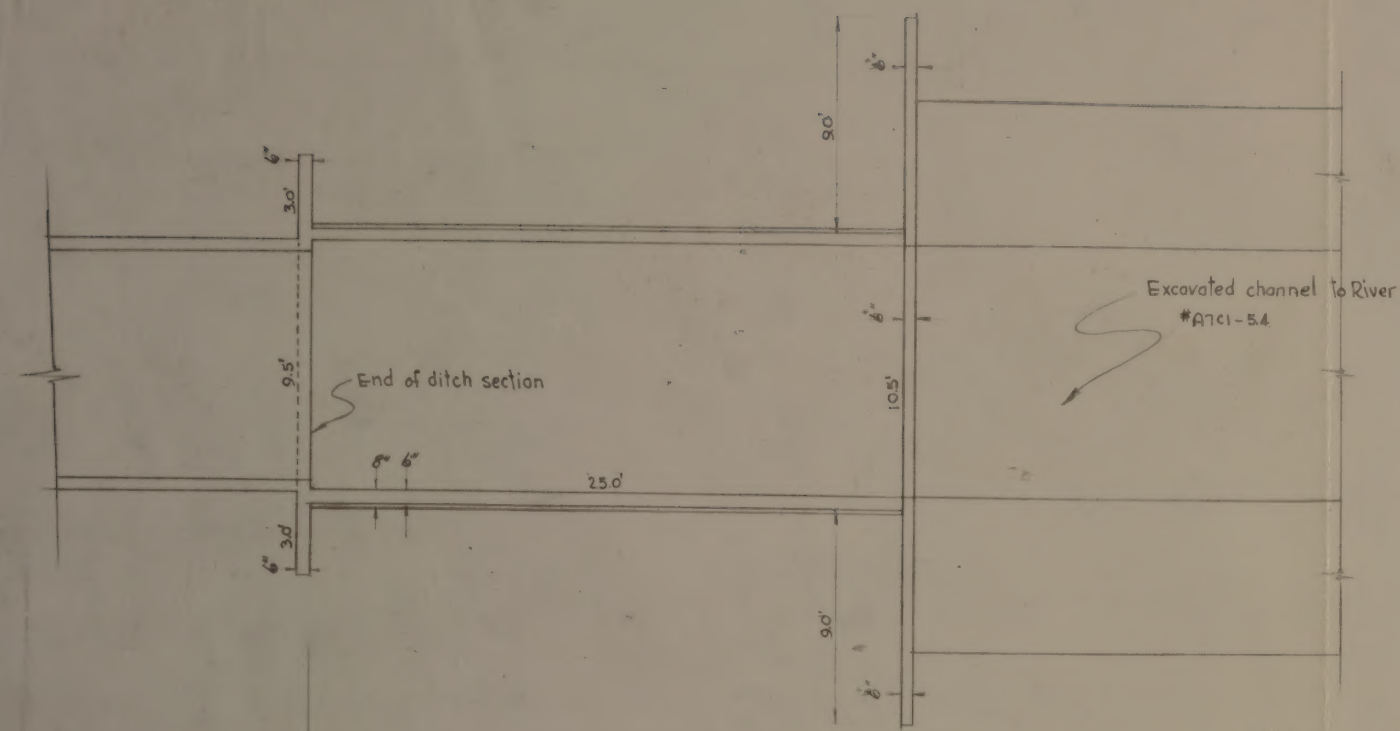
Scale: 1"=8.0'

REGION 7				
WASTEWAY DETAILS				
Purissima Channel Structure #A-1-41				
U. S. DEPARTMENT OF AGRICULTURE				
SOIL CONSERVATION SERVICE				
M. H. BENNETT, Chief				
RECOMMENDED <i>C. C. Best</i>				
ENGINEERING APPROVAL:				
COMPILED:	TRACED:	CHECKED:	DATE:	DRAWING NO.:
CCR	DLW		4-1-47	7-5d-10792



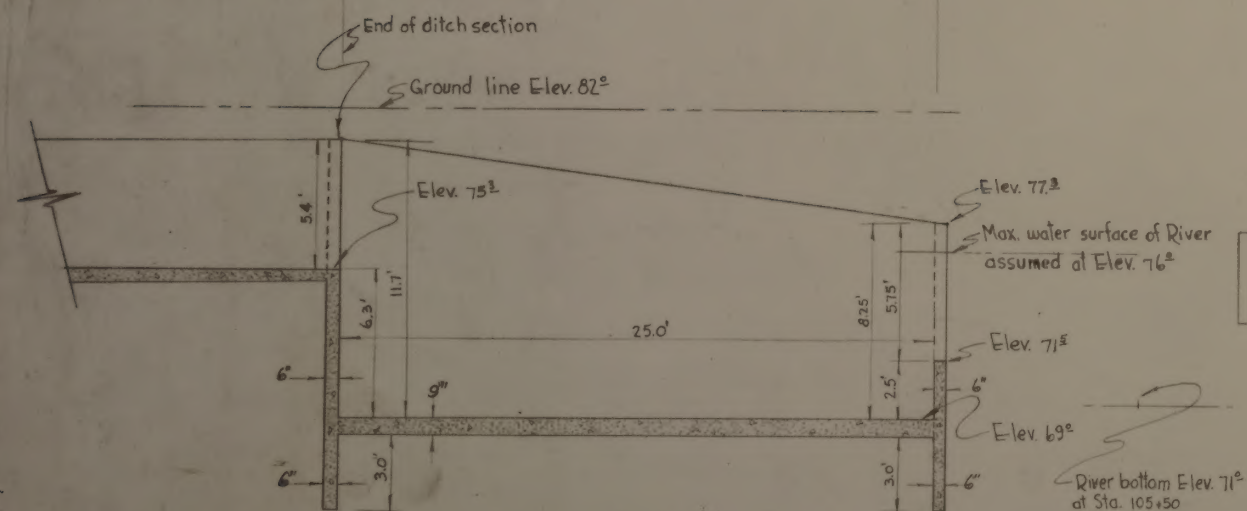
Scale: 1"=20'

REGION 7				
JUNCTION DETAILS				
Cebada-Purisima Channels Structure #A7C1-E1				
U. S. DEPARTMENT OF AGRICULTURE				
SOIL CONSERVATION SERVICE				
H. H. BENNETT, Chief				
RECOMMENDED: <i>cc</i>				
ENGINEERING APPROVAL:				
COMPILED:	TRACED:	CHECKED:	DATE:	DRAWING NO.
CCR	DLW		4-1-47	7-Sd-10792



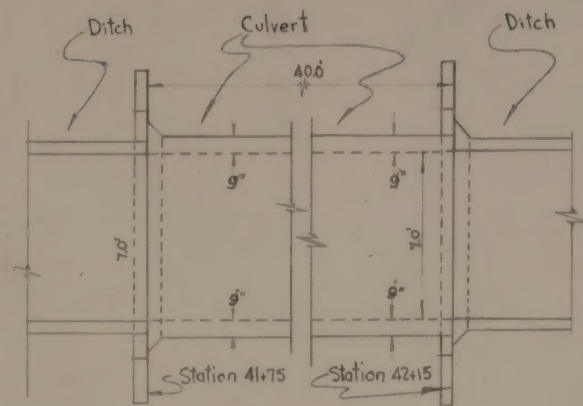
PLAN

DITCH OUTLET STRUCTURE
Structure #A7C1-5.4
Q = 580 cfs



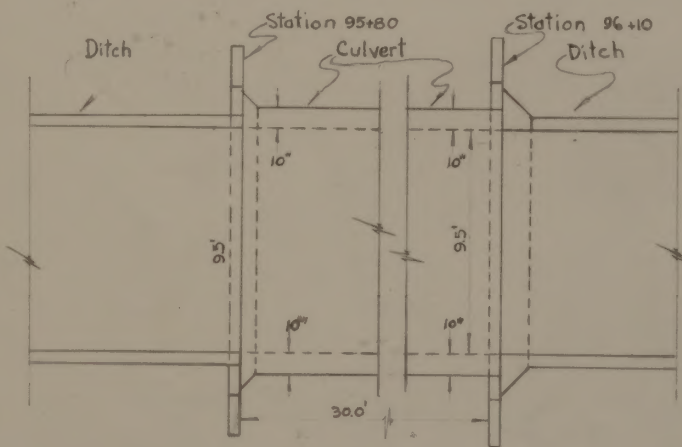
C SECTION

SCALE: 1" = 4.0'

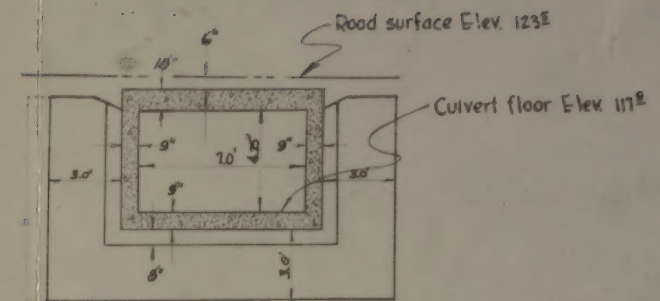


PLAN

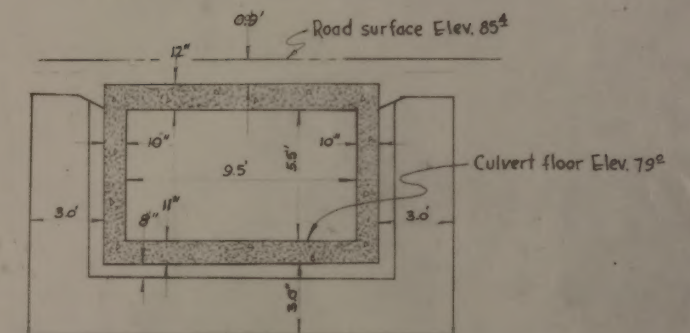
CULVERT
Structure #A7C1-3.4
SCALE: 1" = 4.0'
Q = 350 cfs



PLAN

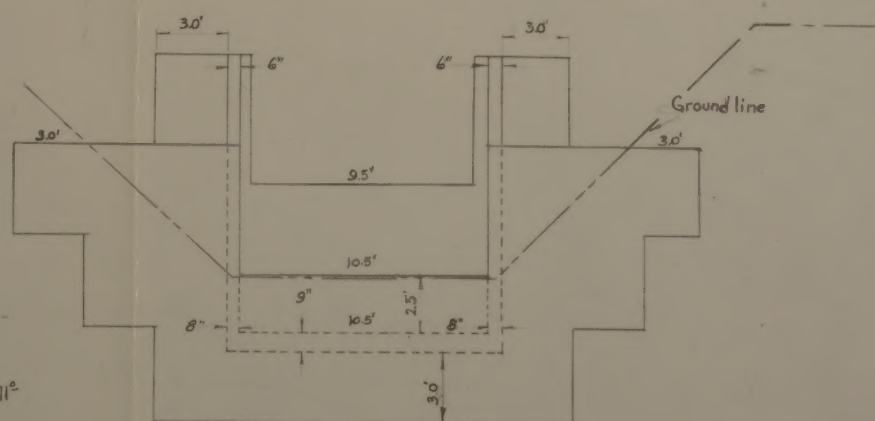


SECTION



SECTION

CULVERT
Structure #A7C1-5.3
SCALE: 1" = 8.0'
Q = 580 cfs



ELEVATION

REGION 7				
STRUCTURAL DETAILS				
STRUCTURES #A7C1-3.4, #A7C1-5.3, #A7C1-5.4				
U. S. DEPARTMENT OF AGRICULTURE				
SOIL CONSERVATION SERVICE				
H. M. BENNETT, Chief				
RECOMMENDED	C.E. [Signature]			
ENGINEERING APPROVAL:				
COMPILED	TRACED	CHECKED	DATE	DRAWING NO.
CCR	DLW		4-1-47	